

Investigation of Biogas from Slaughterhouse and Dairy Farm Waste

Authors : Saadelnour Abdueljabbar Adam

Abstract : Wastes from slaughterhouses in most towns in Sudan are often poorly managed and sometimes discharged into adjoining streams due to poor implementation of standards, thus causing environmental and public health hazards and also there is a large amount of manure from dairy farms. This paper presents a solution of organic waste from cow dairy farms and slaughterhouse. We present the findings of experimental investigation of biogas production using cow manure, blood and rumen content were mixed at three proportions :72.3%, 61%, 39% manure, 6%, 8.5%, 22% blood; and 21.7%, 30.5%, 39% rumen content in volume for bio-digester 1,2,3 respectively. This paper analyses the quantitative and qualitative composition of biogas: gas content, and the concentration of methane. The highest biogas output 0.116L/g dry matter from bio-digester1 together with a high-quality biogas of 85% methane Was from the mixture of cow manure with blood and rumen content were mixed at 72.3%manure, 6%blood and 21.7%rumen content which is useful for combustion and energy production. While bio-digester 2 and 3 gave 0.012L/g dry matter and 0.013L/g dry matter respectively with the weak concentration of methane (50%).

Keywords : anaerobic digestion, bio-digester, blood, cow manure, rumen content

Conference Title : ICEBWEM 2014 : International Conference on Energy, Biomass, Waste and Environmental Management

Conference Location : Montreal, Canada

Conference Dates : May 11-12, 2015